AMENDMENTS TO THE CLAIMS:

Please cancel claim 24 without prejudice or disclaimer and amend the claims as follows:

1. (Currently Amended) A method of patterning a magnetic thin film, comprising:

transforming a portion of the magnetic thin film to be non-magnetic and electrically insulating using a chemical transformation, said chemical transformation comprises using a fluorine-based reactive plasma,

wherein said reactive plasma includes O_2 and a fluorine-containing gas.

2. (Previously Presented) The method of claim 1, further comprising:

providing a mask over said portion of the magnetic thin film to be preserved using photolithography.

3-4. (Canceled)

5. (Previously Presented) The method of claim 1, wherein said fluorine-based reactive plasma comprises any of NF_3, CF_4, SF_6, and CHF_3.

6. (Previously Presented) The method of claim 1, wherein a pressure used in said transforming is within a range of about 10 mT to about 30 mT.

7. (Previously Presented) The method of claim 1, wherein said portion of said magnetic thin film comprises any of $Ni_{0.8}Fe_{0.2}$, and alloys of nickel, iron, and cobalt, and said transforming comprising transforming said any of $Ni_{0.8}Fe_{0.2}$ and alloys of nickel, iron, and cobalt, to a

fluorine-containing film.

8. (Original) The method of claim 7, wherein said fluorine-containing film is non-ferromagnetic.

9. (Currently Amended) The method of claim 7, wherein said fluorine-containing film is non-magnetic.

10. (Original) The method of claim 7, wherein said fluorine-containing film is electrically insulating.

11. (Original) The method of claim 2, wherein said mask comprises a photoresist.

12. (Original) The method of claim 2, wherein said mask comprises a hard mask patterned layer comprising one of diamond-like carbon (DLC), TiN, and TaN.

13. (Previously Presented) The method of claim 1, further comprising:
producing a magnetic device.

14. (Original) The method of claim 1, wherein said using said chemical transformation is performed at room temperature.

15. (Previously Presented) The method of claim 1, wherein said reactive plasma includes a

fluorocarbon.

16. (Previously Presented) The method of claim 1, wherein said reactive plasma includes argon.

17. (Previously Presented) The method of claim 1, wherein said reactive plasma includes sulfur hexafluoride.

18. (Previously Presented) The method of claim 1, wherein said reactive plasma includes bromide.

19. (Previously Presented) The method of claim 1, wherein a pressure is selectively employed for said plasma sputtering such that the magnetic thin film material is substantially free of erosion.

20. (Previously Presented) The method of claim 1, further comprising:

forming an insulating layer over the converted portion of said magnetic thin film and said mask; and

etching said insulating layer and said mask to planarize an upper level of the mask and the insulating layer.

21. (Original) The method of claim 20, further comprising:

selectively etching said mask; and

forming a conductive material over the insulating layer and an area where the mask was selectively etched.

22. (Previously Presented) The method of claim 2, wherein said mask comprises an insulating hard mask, said method further comprising:

after said converting, selectively etching said insulating hard mask to remove said insulating hard mask.

23. (Original) The method of claim 22, further comprising:

forming a conductive material over an area where the insulating hard mask was etched.

24. (Canceled)

25. (Previously Presented) The method of claim 1, wherein said magnetic thin film includes a magnetic tunnel junction (MTJ), and

wherein after said converting said portion, edges of the magnetic tunnel junction have no exposure to oxygen.

26. (Original) The method of claim 25, wherein an edge smoothness of the MTJ is determined by a line edge roughness of the mask.

27-31. (Canceled)